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ABSTRACT

Today's high schools are woefully out of step with the demands of the 21st century workplace. Their structure, once suited for creating skilled laborers and trades people for America's industrial economy of the early 1900s, now engenders an unacceptably high student dropout rate, wide student achievement gaps, inadequate preparation for the work force, and poor preparation for higher education. This report explores the possibilities of restructuring high schools along lines that establish a common core of rigorous standards for all students, align the P-16 educational system, personalize learning experiences for each student, connect schools and students to the community, and develop quality educators and challenging them to take on new roles. Recommendations for policymakers include taking the lead in identifying the need for reform and developing a broad-based response, developing an organizing vision for the reform, pursuing public support for the vision, conducting a state policy audit, developing an action plan and implementation strategy, and using the state university system to conduct research and evaluations of new high school models and strategies. An appendix contains a framework for rethinking high school. (Contains 69 references.) (RT)

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National Association of State Boards of Education

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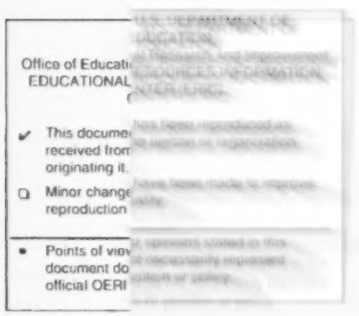

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Policymaking in Support of a Restructured High School

Most Likely to Succeed

Policymaking in Support of a Restructured High School

The NASBE Study Group on Restructuring High Schools Rethinking the Institution

Members of the Study Group

Ms. Susan Stitham, Alaska, Study Group Chair

Dr. John L. Wisthoff, Maryland, Study Group Vice Chair

Dr. William (Bill) H. Adams, New Jersey

Ms. Susan E. Brace, Indiana

Mr. Donald Coolican, Connecticut

Dr. Arnold Hyndman, New Jersey

Ms. Luisa Iadeluca, associate member, New York

Ms. Marlene Jennings, Ohio

Mrs. Marilyn McConachie, Illinois

Ms. Marianne Yared McGuire, Michigan

Mr. David L. Moss, Utah

Ms. Patt Sharp, Missouri

Mrs. Kathleen Straus, Michigan

Dr. Bill Wagnon, Kansas

Mr. Carl Wick, Ohio

Ms. Patricia Willoughby, North Carolina

Ex Officio Members

Michael Cohen, Senior Fellow, The Aspen Institute

Monica Martinez, Director, National Alliance on the American High School, Institute for Educational Leadership

John Nori, Associate Director for School Improvement, National Association of Secondary School Principals

Study Group Staff

Susanna Purnell, Project Director

Mark Fabiz, Senior Project Associate

Lori Meyer, Senior Project Associate

Presenters to the Study Group

January Speakers

Michael Cohen, Senior Fellow, The Aspen Institute

Jan Somerville, Senior Associate, National Association of System Heads (NASH)

March Speakers

Hans Meeder, Deputy Assistant Secretary, Policy and Planning, Office of Vocational and Adult Education, U.S. Department of Education

Mary Helen Spiri, Director, Mid-Atlantic Coalition of Essential Schools

Ephraim Weisstein, Vice President and Director for the Center for Youth Development and Education (CLYDE), Commonwealth Corporation

June Speakers

Gene Bottoms, Vice President, Southern Regional Education Board

Natalie Rodriguez Jansorn, State and District Facilitator, National Network of Partnership Schools, Johns Hopkins University

Doris Terry Williams, Director of Capacity Building, The Rural School and Community Trust

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National Association of State Boards of Education

1. Changing Times and Changing Expectations

In America, high school is a cultural icon. Almost everyone who grew up in the United States any time in the twentieth century can remember—often with great emotion—rituals and images of this singular institution: school colors and mascots, homecoming games, proms, study halls, detention, yearbooks, term papers, changing classes, science projects, language lab, class plays, and, of course, favorite teachers.

That nearly every American can tap into the shared memory is, in its way, a triumph of public education policy. The familiar comprehensive high school model, with its goal of free secondary education for all, was designed nearly a century ago to satisfy the needs of the burgeoning industrial economy. The endeavor was as successful as it was revolutionary. While only 15 percent of 14- to 17-year-olds attended high school in 1910, more than 92 percent of that age group enrolled in 1970.[1] Universal high schooling, along with the educated workforce it produced, was a major reason why the nation became a world power in what would be known as the American Century.

Decades pass, however, and even successful policies need updating. Driven by a competitive global economy and accelerated by technology, our nation's workplace now demands knowledge and skills unheard of just a generation or two ago—including ever-higher levels of postsecondary education. Meanwhile, the once-innovative comprehensive high school model has become rooted in its own traditions, outdated assumptions, and administrative inertia. The high school system that so profoundly shaped our nation's past is not up to the job of providing for its future.

Preparing all students for a lifetime of learning and work

In the early decades of the twentieth century, America's industrial economy called for legions of skilled laborers and tradespeople but relatively few managers and professionals. As a result, the comprehensive high school was designed to sort students into courses of study, or tracks, according to their perceived abilities, with only the top 10 to 15 percent slated for a rigorous college preparatory curriculum. In other words, students were seen as either workplace-bound or college-bound, and educated accordingly.

Today, that distinction is neither acceptable nor real, for two important reasons:

Learning and work today are part of the same continuum. Just as most of today's high school graduates—including those who go on to college—expect to enter the workforce, anyone who aspires to hold a job in the twenty-first century can look forward to a lifetime of learning.

All students deserve high academic expectations. Recognizing this, state and federal policymakers are setting high standards for academic achievement for all students at all levels of the K–12 system. Only by providing every student with the opportunity to meet these standards will high schools fulfill this important mandate.

To become employable adults, all of today's young people, no matter what their chosen careers, will need the capability to master complex skills, the confidence to adapt to rapid change, and the personal skills to function effectively in the workplace environment. To cite just one example of accelerating expectations, the executive summary of U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills (SCANS) report (see box on page 6) noted that "in 1965 a mechanic who understood about 500 pages of various repair manuals could fix just about any car on the road. Today the same mechanic would need nearly 500,000 pages of manuals, the equivalent of about 50 New York City telephone books."[2]

In addition, most high school graduates will need to enter the workforce with at least some postsecondary education. In fact, the National Commission on the High School Senior Year projected that, in the twenty-first century, Americans will require two additional years of formal education after they leave high school.[3] Workers of tomorrow also can expect to participate in continuing education throughout their careers, in the form of on-the-job training or retraining, professional development, recertification programs, or voluntary skills development.

Universities, of course, have their own prerequisites for success, including content knowledge and thinking skills. Universities also expect students to manage time wisely, grasp critical study skills firmly, and evaluate data critically. While today's students depend on high schools to provide the new kinds of knowledge and skills they need to thrive academically as well as professionally, substantial evidence indicates that traditional high schools are not up to this challenge either.

For example, a 2002 survey by Public Agenda revealed that, like employers, college professors give high school graduates low marks on basic academic and performance skills. Three-fourths of the professors gave recent high school graduates ratings of poor or fair on writing clearly, grammar and spelling, and being organized and on time; 68 percent gave poor or fair ratings to the students' basic math skills. Just over half gave graduates poor or fair marks for being motivated and conscientious and being curious and interested in learning; and 46 percent rated the graduates' ability to speak English well as poor or fair. In contrast, just 16 percent of the professors gave similar low assessments to the graduates' abilities to use computers.[4]

Too many dropouts. Researchers disagree about how many students drop out of America's high schools. According to the National Center for Education Statistics, the high school graduation rate in 2000 was 86 percent, with a dropout rate of 5 percent, as it was for most of the 1990s.[5] Critics argue that this percentage overestimates the graduation rate from U.S. high schools

Skills and Competencies that Work

In 1990, Secretary of Labor Elizabeth Dole established The Secretary's Commission on Achieving Necessary Skills (SCANS) to determine what young people need to succeed in the workforce. SCANS defined three foundational skills and five necessary competencies for success in the workplace.

Foundational skills:

- **Basic skills.** Reading, writing, arithmetic and mathematics, speaking, and listening.
- **Thinking skills.** The ability to learn, to reason, to think creatively, to make decisions, and to solve problems.
- **Personal qualities.** Responsibility, self-esteem, self-management, sociability, and integrity.

Competencies:

- **Resources.** Individuals know how to allocate time, money, materials, space, and staff.
- **Interpersonal skills.** Effective workers can work on teams, teach others, serve others, lead, negotiate, and work well with individuals from different cultural backgrounds.
- **Information.** Individuals are able to acquire and evaluate data, organize and maintain information, interpret, communicate, and use computers to process information.
- **Systems.** Effective workers understand social, organizational, and technological systems; can monitor and correct performance; and can improve systems.
- **Technology.** Individuals can select appropriate equipment and tools, apply appropriate technology to specific tasks, and maintain equipment.

SCANS argues that these skills and competencies are fundamental elements of success in the workplace, and students who possess them earn considerably more than students who do not.

Source: *What Work Requires of Schools*, Washington, D.C., U.S. Department of Labor. http://wdr.doleta.gov/SCANS/whatwork/whatwork.html.

because it includes those who earned equivalency diplomas and fails to track every student who begins high school. An alternative calculation compensating for these factors finds a high school graduation percentage in 1998 of only 71 percent.[6] Regardless of which is closer to the truth, neither of these results paint a pretty picture. Intolerably large numbers of students drop out of high school every year, to knock at the door of the workforce with no credentials whatsoever.

Disaggregated data reveal that U.S. high schools do an even poorer job of serving non-white students. National statistics for 2000 show the cumulative dropout rate was 27.8 percent for Hispanic students and 13.1 percent for black students, compared to 6.9 percent for non-Hispanic white students. Among immigrant Hispanic youth, the cumulative dropout rate was a staggering 44.2 percent.[7] Clearly, the comprehensive model high school marginalizes whole groups of students along racial and ethnic lines.

While high schools' failure exacts a great personal toll, society, too, pays a steep price. In Arizona, where a study found that nearly one in three students does not graduate from high school, researchers estimated that the state lost $159 million annually in personal income and $47.7 in state taxes, based on those dropouts' loss of earning potential. The study observed that, "Arizona cannot afford to continue with the dropout crisis if it expects to be economically viable in the future."[8]

Wide gaps in student achievement. For those students who remain in high school, persistent gaps in achievement track along

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racial and socioeconomic lines. For example, while 20 percent of 17-year-old white students scored at the proficient or advanced level in the NAEP 2000 math assessment, only 3 to 4 percent of African Americans and Hispanics reached similar marks. Similar inequities can be found in almost every measure of high school achievement, including scores on the SAT and ACT college entrance exams and participation and passing rates in the Advanced Placement (AP) program. In fact, by the end of high school, the average reading and math skills of 17-year-old African American and Hispanic students are about the same as those of 13-year-old white students. [9]

While other nations also have gaps in academic achievement, the United States has the dubious distinction of leading the way. According to the Program for International Student Assessment run by the Organization for Economic Cooperation and Development (OECD), in a 32-nation comparison of performance among 15-year-olds in reading, math, and science, students from the United States demonstrated the most pronounced gap of any country between high and low performers.[10]

Inadequate preparation for the workforce. In its 1992 report, SCANS observed that, "more than half our young people leave school without the knowledge or foundation required to find and hold a good job. These people will pay a very high price. They face the bleak prospects of dead-end work interrupted only by periods of unemployment."[11]

Ten years later, a survey by the National Association of Manufacturers (NAM) suggested that poor preparation for the workforce has equally bleak results for employers. According to the NAM survey, employers must interview six job applicants on average to find one qualified employee. One-fourth of the companies surveyed said they could not improve the quality of their products because employees were not able to learn appropriate skills, and about one-third of companies reported that they could not install modern work systems because employees could not learn new jobs.[12]

Sounding a warning to the study group, NAM reported that almost 80 percent of companies did not think schools were doing a good job preparing students for the workplace and one-half indicated schools were not adequately teaching basic workplace skills, such as punctuality. In addition, 30 to 40 percent identified reading, writing, math, and problem solving as areas needing improvement.[13]

Poor preparation for higher education. Colleges and universities look to high schools to prepare incoming freshmen. There is ample evidence, however, that too many students enter college inadequately prepared to meet the challenges of postsecondary education.

1. Almost half the students attending four-year colleges take at least one remedial course.[14]

2. Dropout rates after one year of college are 26 percent for four-year colleges and 45 percent for two-year colleges.[15]

3. Many colleges and universities find they need to provide classes to help students develop study and time-management skills that are critical to success in college.[16]

Racial and ethnic disparities persist in postsecondary attendance and graduation rates. For example, while white and African American high school graduates enter college at rates of 59 and 50 percent, respectively, only 16 percent of African American students earn a bachelor's degree, compared to 28 percent of whites. Similarly, one-third of Hispanics enter college, but only 10 percent complete a bachelor's degree.[17]

In its international survey of literacy, lifelong learning, and skills development in the knowledge economy, the OECD found that this disparity can have a profound and lifelong effect. Among Americans 16 to 25 years old, almost 60 percent of high school graduates who did not go on to college scored below what the OECD considers the literacy level needed to deal with "the complex demands of modern life."[18] Ironically, many of the shortcomings of today's high schools can be attributed directly or indirectly to the well-intentioned but outdated design of the traditional comprehensive model.

1. **Low or uneven expectations.** Because the comprehensive high school model assumes that the most rigorous courses are appropriate for only a small percentage of students, most students are assigned to a general course of study that is characterized by relatively weak academic content. Perniciously, the ways in which high schools sort students often results in segregating students within the school by race, ethnic group, and socioeconomic status as well as sex. Low expectations for some groups of students may result in unequal allocation of resources, such as computers or textbooks.

2. **Poor preparation for life after high school.** Based on the premise that only an elite percentage of students go on to college, the comprehensive high school often fails to prepare students for the academic and other challenges they will face in the postsecondary system. High school graduation requirements remain largely unaligned with postsecondary expectations.

3. **Organizational structures that alienate rather than support students.** Preparing students of varying abilities for jobs in an industrial economy required comprehensive high schools to organize in ways that allow them to offer many different courses. High schools thus have a strong incentive to consolidate, so that their combined enrollments can support more course offerings. In many schools, however, the variety of choices has come at the cost of a more depersonalized system of education, in which students can fall through the cracks.

4. **Learning separated from its real world context.** Schools too often wall off students from the rest of the world. In the comprehensive high school, the demands of a seven- or eight-period day make it difficult for students to have opportunities to participate in community-based learning experiences such as service learning and deprive the school of access to community resources.

5. **Barriers to excellent teaching.** Departmentalizaton and fragmentation fostered by the comprehensive high school model make it difficult for teachers to monitor students' overall academic progress or collaborate across the curriculum on strategies to enrich learning experiences, address problems, or accommodate different learning styles. The rigid structure of a comprehensive high school day can prevent teachers from obtaining essential professional development.

Rethinking the High School: Form Follows Function.

NASBE's 2002 Study Group on Restructuring High Schools: Rethinking the Institution examined the function of the high school—specifically, how it can provide all students with an education that prepares them for the future and with diplomas that are truly meaningful.

To do this work, the study group met with education researchers, reform-model developers, technical advisors, and policy analysts; reviewed the relevant research; and discussed what they were learning with individuals working in high schools. In its deliberations, the study group came to several understandings:

1. The high school has maintained a relatively consistent structure of education for almost a century.

2. While high schools have remained the same, the expectations that institutions of higher education and the business community hold for high school graduates have changed dramatically.

3. More often than not, high schools are doing the job that they were designed to do, but the job they were designed to do is no longer the job they need to do.

4. To bring today's high school in line with the new demands of higher education; the workforce; and the global, high-tech economy, policymakers and practitioners must consider new forms of schooling based on more rigorous, flexible, and inclusive models and structures.

During the 1980s, education reformers responded to concerns about high schools through incremental changes, such as "different curricula, higher certification standards for teachers, and more testing of everyone. Despite their efforts, students performed essentially no better at the end of the decade than they were at the beginning. More of the same has not been a successful strategy."[19]

The study group believes that the sweeping improvements needed to prepare all students for today's economy require fundamental, systemic changes. Policymakers and practitioners must have the courage to rethink the treasured institution of the American high school—starting with the basic premises of function and form.

1. **Function:** High schools must reject the notion that students with different abilities should be prepared for different futures. They must be willing and able to prepare *all* students to achieve *both* in postsecondary education *and* in the workforce without remediation.

2. **Form:** Policymakers and practitioners need to reconsider the one-size-fits-all structure of the comprehensive high school. They must provide different kinds of high schools that meet individual student needs and interests and that engage all students in learning while adhering to the same set of rigorous standards. Where high schools used to provide *one* comprehensive institution to track students into *several* different academic options with different levels of rigor, they now may need to consider *several* different institutions to bring students to *one* highly-rigorous standard of academic performance.

Rethinking both the form and function of the high school invites policymakers and practitioners to question fundamental assumptions about the ways in which traditional high schools are structured. For example:

1. **What a high school looks like and how it operates.** Traditional assumptions define the high school as a specific building in which students attend classes for seven or more hours a day over four years. The new vision of high school is one that is flexible enough to engage all students in achieving high standards. The high school may no longer need to be contained in one building, may no longer need to span four years, and may no longer need to occur at the same time everyday.

2. **Who attends the high school.** Traditionally, students enter high school at age 14 and remain for four years. The new vision of high school expects that students may attend for three, four, or five years, depending upon the rate at which they master the curricula and the number of off-campus experiences they elect.

3. **What students learn in high school.** Traditionally, students perceived as having different abilities were expected to master different curricula, with mastery defined by the accumulation of Carnegie units. The new vision of high school calls for all students to achieve rigorous standards aligned to postsecondary education and the workforce.

4. **Ways of knowing that students are ready to graduate from high school.** Students graduate from traditional high schools after they earn the required number of Carnegie units. In some states, students also need to pass a state assessment. In the new vision of high

schools, students will be deemed ready to graduate when they demonstrate their mastery of a rigorous curriculum that includes the knowledge, skills, and dispositions that students need to succeed in college and the workforce.

5. **How the high school is organized.** In most traditional comprehensive high schools, instruction is segmented into brief periods of an hour or less, so students can circulate through classes in each subject. Teachers are organized only into academic departments, a situation that discourages interdisciplinary collaboration or evaluating the overall academic progress of individual students. The large size and geographic isolation of many traditional high schools promotes student alienation from the school, from their teachers, and from each other. In the new vision of high schools, smaller institutions can develop specialty niches to meet varied student needs. Teachers can work together across disciplines and throughout the school environment to develop curricula that incorporate the skills students need for postsecondary education and the workplace.

6. **How the high school is staffed.** In traditional high schools, courses are supposed to be taught exclusively by teachers who are licensed by the state to teach specific subjects. New visions of the high school enable business, industry, and higher education faculty to assume greater roles alongside teachers in teaching secondary students. High schools also may be empowered to reorganize staff to encourage cross-disciplinary curricula and courses.

Rethinking the forms of the American high school in relation to the needs of higher education and the workforce opens a wide range of organizational options for policymakers and practitioners to consider. Appendix A of this report describes in detail the kinds of questions and policy options that state and local decisionmakers may consider as they develop new models that will meet the needs of their diverse student populations.

To allow local communities to consider a range of organizational options to achieve the goal of high standards for all, state policymakers need to create a policy environment to support local efforts. In the next chapter, the study group identifies five policy areas that align with both key structural deficiencies in the traditional comprehensive school model and with goals held in common by most highly regarded models for reform.

- **Establishing a common core of rigorous standards for all:** rethinking what students learn, when they are ready to graduate, and how to apply rigorous standards for all students.
- **Aligning the P–16 System:** rethinking the process as a continuum of learning, easing the transitions between middle and high school and high school and postsecondary education.
- **Personalizing learning experiences for each student:** rethinking how students and teachers relate to their schools and each other, engaging them in the goal of success for each student.
- **Connecting schools and students to the community:** rethinking the context of teaching and learning, providing access to new learning experiences and local resources.
- **Developing quality educators and challenging them to take on new roles:** organizing the high school to support excellent teaching.

The study group recognizes that how the vision of the new high school is realized will—and should—differ in every community. For example, in smaller districts with only one or two high schools, the schools themselves would likely continue but they would be restructured to incorporate many of the elements suggested by these five critical policy areas. On the other hand, some larger districts may find that it is preferable to develop a number of different models for their high schools, the better to serve the needs of individual communities. The bottom line for policymakers is to ensure that state and local policies fully address the learning needs of all students in preparing them for life in the twenty-first century—while at the same time providing practitioners the flexibility and tools they need to get the job done.

2. State Policies and the Restructured High School

Early in the process of rethinking the high school, states need to examine how their current policies influence school structure and allow for desirable changes. For example, most states continue to be guided by policies supporting the traditional comprehensive high school model that holds different expectations for different groups of students and applies rigid Carnegie unit requirements to determine advancement. Despite wide implementation of standards and assessments, as of May 2002 only two states had established graduation requirements based on state standards.[20]

To prepare *all students* for both postsecondary education and the workforce, states need policies that support a menu of models addressing the needs of their diverse student populations. Of course, each state's policies will depend on its own vision of what its high schools should do and how they should be held accountable, so it would be fruitless to suggest a set of specific policies that would serve all states. Still, a review of nine widely accepted models for high school reform reveals several common goals that, in turn, suggest several key areas in which state policies will guide the implementation and outcomes of reform efforts.[21] As such, these shared goals form a useful framework for identifying the policy issues that must be addressed to effect meaningful and sustainable high school reform.

1. Establishing a common core of rigorous standards for all. All high school reform models are committed to high academic standards applicable to all students. The standards are understood by all and allow students to take charge of their learning. The school provides the support each student needs to reach the standards.

2. Aligning the P–16 education system. In contrast to the traditional view of K–12 as a discrete system, reform models see education as a continuum of learning experiences that begin in pre-kindergarten and extend through college. Instead of playing a terminal role leading only to graduation, high school serves as a transition to postsecondary education and the workforce. Because levels of education are linked rather than isolated, policies should support alignment not only within the K–12 system but also between high school and college.

3. Personalizing learning experiences for each student. In high school reform models, learning is student-centered. Every student feels a personal connection to the school and is known well by at least one adult. Students participate in determining how they will meet learning standards and their personal goals.

4. Connecting schools and students to the community. Reform models reach out to parents and the greater community to involve caring adults, gain access to resources, and expand learning opportunities. This breaks down the walls that often separate students from the adult world, giving students opportunities to learn about the workplace and to develop a sense of civic responsibility.

5. Developing quality educators and challenging them to take on new roles. To prepare students effectively for the twenty-first century, schools must be staffed with qualified educators. In reform models, professional development and integrated learning are important, ongoing priorities. Educators have opportunities and resources, including time, to update their knowledge in their subject areas and to acquire the multidisciplinary teaching skills needed to help students become effective thinkers, scholars, and workers. Educators collaborate with each other and form learning communities, taking on new staff roles as needed to support reform initiatives.

1. ESTABLISHING A COMMON CORE OF RIGOROUS STANDARDS FOR ALL

Extensive research makes it clear that the comprehensive high school model no longer prepares most students for postsecondary education or the workforce.

It does not challenge all students academically. When students are sorted into

A Culture of Low Expectations

High school students in vocational tracks recognize that they are not being challenged. In 1998, the Southern Regional Education Board (SREB) conducted an assessment of schools using the High Schools That Work model. Based on data from 444 high schools in twenty-two states that use the model, the assessment revealed a sad picture of young people who feel left behind by the system:

- About 60 percent said most of their courses were not challenging;
- Thirty-two percent said teachers let them get by without doing the work;
- Nearly 60 percent said they did no homework for vocational classes in a typical week;
- Fifty-two percent said most courses repeated content they already had learned;
- Thirty percent said they received no help from a teacher or counselor in developing a program of study for high school;
- Sixty-five percent said they were not encouraged to take more science courses;
- Fifty-seven percent said they were not encouraged to take more mathematics courses; and
- **Although they believed they were ill-prepared, almost 70 percent of the vocational students said they would continue their studies** after high school graduation.

Source: Gene Bottoms and Alice Presson. (nd) *Finishing the Job: Improving the Achievement of Vocational Students.* Atlanta, GA: Southern Regional Education Board.

different programs and given different educational opportunities according to their perceived abilities, most are relegated to general and vocational classes, where they typically get watered-down instruction in a context of low expectations and little encouragement to take more rigorous courses.

Students in the higher tracks also may be shortchanged. Among U.S. high school students surveyed by the Third International Mathematics and Science Study of 1995, less than one-third took three years of math (i.e., through algebra 2) and three years of science (i.e., biology, chemistry, and physics). Among students tracked in a college-preparatory program, only 40 percent took the complete sequence of math and science courses.[22]

It does not teach needed work and life skills. Just as states have been slow to incorporate work skills—such as those identified in the SCANS report—into their standards, high schools have similarly neglected to bring these into their general curriculum.

Even specifically vocational programs have had trouble integrating these skills. In part, this is because there is limited research on contextual instructional strategies. Some skills, such as taking responsibility for one's work or teamwork, typically are not taught directly and have to be embedded in the curriculum. Finally, educators have tended to denigrate work and other life skills as entry-level or soft knowledge, when, in fact, these are foundational skills all students will need throughout their academic and work experience.

In the ideal of the restructured high school, all students work toward rigorous learning standards that include both academic content and work skills. Learning standards will be flexible, leaving high schools free to draw on a choice of structural models and other strategies to meet the instructional needs of a diverse population. For example, standards would allow schools to address different learning styles with a variety of approaches, such as contextual learning, direct instruction or e-learning, grouping students in different ways, and permitting students to fulfill the requirements of high school and meet the standards at their own pace within a three- to five-year window.

Policy Issues

Restructuring high schools around rigorous and flexible learning standards has widespread policy implications. States will need to consider the content and implementation of their learning standards and to determine how to support students with varying needs.

1. Incorporating rigorous academic learning and workplace skills into the state system of standards, assessments, and accountability.

Learning standards should provide both the rigor that promotes high achievement and the flexibility that allows schools to use an assortment of strategies to meet the standards. States need to strike a careful balance: while standards must be clear, if their content is too detailed or prescriptive, schools will find it difficult to employ interdisciplinary or project-based learning strategies and still ensure students learn all the required information.

Giving schools and districts flexibility in implementing the curriculum is also key to effectively incorporating workplace skills into state standards. Policies that address preparing students for the workplace typically have focussed on standards specifically for vocational and technical programs—not the core standards that affect all students. In fact, during the past decade, many states have developed standards for certain jobs and industries, often in partnership with business and industry organizations. While there is considerable agreement that standards for workplace skills should be applied to all students, questions remain about how closely workplace standards should be integrated with standards for academic learning.

Finally, if states want to assess the full twelve grades, they have to consider how they are holding students accountable through assessments and graduation requirements. To assess academic achievement, many states administer high-stakes tests that are tied to high school graduation. Many of these tests, however, may not be doing their job as well as they should. In some states, for example, high-stakes tests measure only minimum competencies in mathematics and language arts and are given as early as the tenth grade.

New York's Board of Regents has taken a more rigorous approach. Since 1996, all high school students in the state are required to take the Regents Comprehensive Examination, previously used exclusively for the college preparation track diploma. New York has phased in requirements and gradually raised the cut-off scores so that, by 1999, all high school students had to pass the five Regents examinations—in English, mathematics, global history and geography, United States history and government, and science—to graduate.

Large-scale assessments that gauge career skills are not widespread in the K–12 system. Of the few states that do test workplace skills, most have first incorporated competencies within the state academic standards, then added workplace skills, questions, or sections to a statewide assessment. California, Illinois, Kentucky, Maryland, and Virginia are a few of the states that have addressed some of these skills on statewide tests (see box below).

Even advocates of rigorous standards and high-stakes testing agree that no student's future should be tied to the result of a single assessment. States using high-stakes tests need to make sure there are multiple measures of performance.

2. Providing all students the opportunity to learn.

Research confirms that students cannot achieve at high levels without challenging, content-rich courses. What is taught determines what is learned. As one researcher observed, "In terms of student achievement, it's better to flunk a college-prep course than it is to take and pass a general math course."[23]

The Prairie State Achievement Examination

The Illinois State Board of Education has been in the vanguard of incorporating work skills into the state standards and accountability system.

When learning standards were developed for the state, participants in the process included employers and community leaders as well as educators from the K–12 and higher education systems. As a result, reading skills are measured on the one hand by comprehension of fiction, social science, and natural science and on the other by comprehension of work-related policies, bulletins, manuals, and regulations.

To assess the different skills, eleventh graders take the Prairie State Achievement Examination (PSAE), which comprises tests for reading, writing, mathematics, science, and social science. The state board developed assessments for writing, science, and social science. In addition, students take the ACT assessment, which includes reading, English, mathematics, and science reasoning. Finally, the examination incorporates two WorkKeys assessments, including reading for information and applied mathematics. Taken together, the six components cover the state standards.

Asked why all students take both college application and work skills tests, regardless of their immediate plans for postsecondary education, the state board noted that both kinds of tests are relevant for all students. As the ACT aligns with state academic standards, it lets students gauge their strengths and weaknesses in those areas. In addition, the board obtained agreement from colleges and universities to accept the ACT assessment for college admission if the test takers choose; students not immediately going on to postsecondary education can apply the ACT assessment later if they choose to continue their education. Similarly, the WorkKeys scores help all high school students match their mathematics and reading skills to specific jobs. Both kinds of tests add relevance for the students taking the exam.

As the first cohort of students with (PSAE) scores starts college in fall 2002, Illinois will track their success to determine whether the scores carry enough predictive value to be used as college admissions criteria. As 75 percent of students expect to attend college, using the PSAE for admissions would provide additional incentive for students to achieve learning standards.

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Tracking a cohort of students from tenth grade to age thirty, a recent longitudinal study found that the curriculum students took in high school was the most important predictor of college graduation, surpassing other likely factors, including income and race. The study found that students who took rigorous academic courses, such as AP, or more than three preparatory courses in English and mathematics and two in lab sciences were more likely to complete a four-year postsecondary degree.[24] Similarly, a study of the High Schools That Work sites showed that students who took a sequence of rigorous courses did better on achievement tests and were more successful in college or the work world. [25]

For high schools, providing all students with challenging course work keyed to academic standards (and providing teachers with the professional development they will need to successfully reach all students) will require nothing less than a new way of working. Schools must commit to a goal of excellence for their full and diverse student populations and to developing effective strategies to reach every student. Because some students need more time and support than others, schools also will have to rethink administrative issues, such as the school schedule, staff assignments, and arranging extra resources and help.

As high schools change in different ways, policymakers will need to reexamine how the state provides support. Some assumptions that drive current funding policies—for example, formulas used to allocate positions and other resources—will become irrelevant. Others may evolve as schools learn which approaches best meet the needs of their diverse populations. For example, a goal of universal achievement makes it likely that some students are going to need more time and attention, so states may need to target certain schools or students with extra support. Several states already have allocated extra funding for students having trouble passing state assessments. In Massachusetts, the legislature allocated over $80 million over three years to help students at risk of failing that state's assessments tests. State funding of school expenditures also will be impacted if local districts pursue proposals to offer students three-, four-, or five-year tracks to earn a high school diploma.

Michigan's Policy on Learning Expectations for Students

In June 2002, the Michigan State Board of Education adopted Learning Expectations for students that "apply across all content areas and are intended to be integrated into all curricular and extracurricular programs, the counseling program, and the life of the school and community." The Learning Expectations include:

- *Gather information* - research and retrieve from primary and secondary sources
- *Understand information* - synthesize and evaluate in a comprehensive fashion
- *Analyze issues* - analyze and evaluate various considerations, arguments and views
- *Draw and justify conclusions* - use reason and evidence to identify, consider and evaluate
- *Organize and communicate information* - present in a variety of media effectively
- *Think and communicate critically* - use clarity, accuracy, relevance, depth, and logic
- *Learn and consider issues collaboratively* - share inquiry in a team-based fashion
- *Create knowledge* - create new questions, knowledge and approaches
- *Act ethically* - adhere to the highest intellectual and ethical standards

In enacting the policy the state board envisioned that the interaction of the content standards and learning expectations will prepare students for lifelong learning and achievement because they encourage educators to create more engaging, meaningful and challenging tasks.

Implicit in every student's opportunity to learn is access to technology. It is a given that students need to be proficient on the computer and other high-tech business tools in order to function in the twenty-first-century workplace, but there is ample evidence that students who are not technologically proficient will be ill-prepared for the academic world as well. A school environment that includes e-learning enhances student achievement by increasing student engagement, empowering students to become active producers of knowledge and multimedia communicators. When technology is used as a

High School Reform Model: **High Schools That Work**

High Schools That Work (HSTW) was one of the first large-scale initiatives to help high schools fully prepare students for work and continuing education. Started in 1987 by the SREB's State Vocational Education Consortium, with 28 schools in thirteen states, the model has grown to more than 1,100 sites in twenty-seven states.

The HSTW model is "based on the belief that, in the right school environment, most students can learn complex academic and technical concepts." The major goals of the initiative are to:

1. Raise the mathematics, science, communication, problem-solving, and technical achievement of more students to the national average or above;

2. Blend the essential content of traditional college-preparatory studies—mathematics, science, and language arts—with quality vocational and technical studies by creating conditions that support school leaders, teachers, and counselors in carrying out key practices; and

3. Advance state and local policies and leadership initiatives necessary to sustain a continuous school-improvement effort.

To realize these goals, HSTW promotes the following key practices to advance student achievement:

- **Vocational studies:** increasing access to intellectually challenging vocational and technical studies, with emphasis on using high-level academic skills in the modern workplace and in preparation for continued learning.
- **Academic studies**: increasing access to essential concepts from the college-preparatory curriculum by encouraging students to use academic content and skills to address real-world projects and problems.
- **Program of study with high expectations**: challenging students to complete a program of study with an upgraded academic core and a major.
- **Work-based learning**: giving students and their parents the option of a system that integrates school-based and work-based learning.
- **Teachers working together**: organizing, structuring, and scheduling to give academic and vocational teachers time to plan and deliver integrated instruction aimed at teaching high-level academic and technical content.
- **Guidance**: involving each student and his or her parents in a guidance and advising system that ensures the completion of an accelerated program of study with an in-depth academic or vocational-technical major.
- **Extra help**: providing a structured system of extra help to enable students who may lack adequate preparation to complete an accelerated program of study that includes high-level academic and technical content.
- **Keeping score**: using student-assessment and program-evaluation data to continuously improve all aspects of the school.

According to the SREB, "Students at HSTW sites complete an upgraded academic core taught to college-preparatory standards. In addition, students 'major' in either a broad technical field of study or further academic studies. By requiring students to earn four credits in a concentration, high schools hold students to higher intellectual and technical standards in those courses. The HSTW program replaces the archaic general-education track, which fails to prepare students adequately for work or further education."

Source: Southern Regional Education Board, *High Schools That Work*, available online at www.sreb.org/programs/hstw/background/2002_HSTW_Brochure.pdf.

tool in inquiry-based learning, it fosters the development of higher-order thinking skills. And instructional software can provide students with the time and pacing to ensure mastery learning.[26]

Policies for Review

States need to review their learning standards and assessments to incorporate the career skills needed for both academic and workplace success.

States need to actively support alternate instructional strategies for reaching diverse student enrollments. This includes developing a learning environment that relates to the technology found in the workplace. To this end, policies can:

- *Ensure equity of access to technology and e-learning.* The study group endorses the recommendation of NASBE's Study Group on e-Learning: The Future of Education. States and local districts need to ensure that students benefit from quality e-learning environments that include effective instructional staff, access to appropriate equipment and the Internet during and after school; and access to technologies that help students with special needs.[27]

- *Promote collaboration to develop course units and activities.* A major barrier to restructured schools and approaches is that teachers, on their own, may not have the knowledge nor time to develop the coursework using contextual learning and other instructional strategies. In addition, courses have to combine workplace and career content with academic content standards. State schools of education and state education agencies can help by developing and making available course units and activities aligned to state standards for different disciplines and career areas. State education agencies also should provide professional development and technical assistance to help schools implement such strategies appropriately.

States need to adjust the timeframe associated with high school so that all students can meet the standards at their own pace. This may require an adjustment in Carnegie units, which institutionalize a one-size fits all approach based on time spent on coursework. While providing extra time to students who need it might require additional funding, states also could realize savings when students choose to accelerate their coursework.

2. ALIGNING THE P–16 EDUCATION SYSTEM

Successfully restructuring the high school depends in great part on creating effective links to other parts of the education system:

To elementary and middle schools. If high schools are to support achievement based on rigorous standards for all students, the process must begin in elementary school and continue through the middle school years. Aligning standards and expectations from prekindergarten forward makes it more likely students will arrive in high school with the skills and knowledge they need. Aligning middle and high schools also may ease the transition of ninth graders to high school.

To postsecondary education. For most of today's students, high school will not be the final destination. The National Commission on the High School Senior Year predicted that in the twenty-first century, all Americans will require two additional years of formal education after they leave high school.[28]

In the vision of the NASBE study group, graduation from the restructured high school will mark a logical and smooth transition to the worlds of postsecondary education and the workplace. As the restructured high school affords a choice of models and experiences, the nature and even the duration of the graduation transition also will vary. For example, many high school students already accelerate their progress to postsecondary education by taking college courses in high school; in the future, students will likely have even more options in a range of venues, from colleges campuses to nearby work sites. This trend could provide states with an added incentive as well as a starting place as they consider policies that facilitate the alignment process.

Policy Issues

Despite the advantages of aligning high school within the P–16 system, reformers face a number of challenges to accomplishing that goal.

Aligning separate and fragmented systems

Historically, K–12 and postsecondary education have operated as two sovereign and largely isolated systems. Their disconnection has made it harder for high school students to make the smooth transition from one system to the other, or even to focus on goals that will be acceptable to both.

For example, as states begin reforming their K–12 systems, there is little evidence that postsecondary systems are realigning their requirements to reflect the changes. According to the National Commission on the High School Senior Year, as of October 2001, only ten states have aligned their high school graduation and college admissions requirements in English and only two have aligned their requirements in mathematics.[29] Similarly, national college entrance and placement exams are not aligned to high school standards and curriculum. In fact, AP tests are virtually the only national examinations that straddle the two systems, with both high schools and colleges in agreement over what is being tested.

Even when the two systems do work together, their vastly different policies and cultures sometimes create issues. For example, community colleges and high schools have entered into a number of arrangements that allow high school students to take college courses or, like tech prep, participate in a sequence of courses that begin in high school and continue in a community or four-year college (see box on page 21).

Questions arise, however, over who pays for the courses when the student is still in high school. In the case of dual enrollment, the college often gets paid for the course at the same time that the high school receives the full per-pupil funding. In other cases, the student or the high school pays at least part of the tuition. Sometimes, the community college pays part of the cost as a recruitment incentive for the student to attend the college after high school graduation. Similarly, at some middle college high schools (i.e., schools located on a community college or university campus), tensions have arisen over the lower salary scales of the high school relative to the college and over the unionization of the K–12 teachers versus the "professional" status of the faculty of the host college.

Not only are K–12 and postsecondary separate systems, but each system also is fragmented within itself. For example, the K–12 system hardly can respond coherently when the people responsible for curricular design occupy a separate occupational silo from those who are responsible for assessment, or when licensing and certification, teacher recruitment, and teacher preparation are disconnected functions.

Facilitating the transition from middle school to high school.

Progressing from middle to high school is a pivotal experience for students. A successful transition can pave the way for success and graduation, while a difficult experience can set up opposite expectations. Sadly, but perhaps not surprisingly, this also is the time when the dropout rate increases.[30]

How well a student is prepared academically for high school work is a key factor in determining what the future is likely to hold. Yet, the disconnection between the middle and high school segments of the K–12 system leaves many students vulnerable to failure. In a recent study of inner-city high schools, for example, researchers found that ninth graders arrived with basic reading and math skills from elementary school but did not have the intermediate skills associated with the middle school.[31] This misalignment also poses challenges for high schools, which must train teachers on effective catch-up strategies, procure age-appropriate materials, and find enough time to bring students up to the level of high school coursework.

While one segment of students reaches high school well below grade level, another segment—though officially at grade level—still arrives unprepared for the more rigorous, preparatory courses. In working with schools adopting the High Schools That Work model, SREB found that

High School Reform Model: The Talent Development High School

This comprehensive school reform model incorporates changes in school organization, curriculum, and instruction, plus staff professional development, to address the challenges posed by troubled high schools generally characterized by low achievement scores and poor graduation rates.

Through its work with inner-city high schools, Johns Hopkins University's Center for Research on the Education of Students Placed At Risk began designing the Talent Development High School model with career academies in 1994. The model includes a number of elements designed to help students "break the cycle of failure," a process supported by restructuring and building the capacity of the school itself. Major components of the model follow.

- **Ninth-Grade Success Academy.** To support the transition from middle school, all entering freshmen are assigned to an interdisciplinary team of teachers in a school-within-a-school approach. Students take four complete courses per semester, using a flexible block schedule with extended periods of 90 minutes. This allows students promoted to high school with poor basic skills to take a "double-dose" curriculum in English and math. Courses have been designed specifically to help students who are two or more grade levels behind in reading or who lack the basic skills required to succeed in algebra and geometry catch up. Students also take Freshman Seminar, a course designed to give students needed social and study skills as well as enhance their understanding of how success in school is relevant to success in adult life.

- **Career academies.** Students spend the rest of high school in self-contained career academies of 250 to 350 students. There is no tracking, as the academies provide all students with a core college preparatory curriculum and work-based learning experiences designed in accordance with local employers' needs.

- **Make-up courses on students' own time.** Students get only one chance to pass a course during the school year. Students can retake courses or earn missing credits by attending summer school, Saturday school, or after-hours "credit school."

- **Teacher support.** The model builds in several layers of professional support. Beyond the traditional workshop training that introduces design and curriculum, this model features classroom-level assistance on model lessons and effective instructional strategies. Assistance is provided by peer teachers who offer weekly in-classroom assistance, lead teachers who have received more intensive training, and instructional facilitators provided by Johns Hopkins.

- **Twilight School.** This alternative education program nested in the school is designed to help students who demonstrate behavior problems or difficulty adjusting to school and students who reenter school after expulsion or time spent in the juvenile justice system. Twilight school meets after regular school sessions for three hours daily. Students take two or three classes for credit. In addition to featuring small classes with an academic emphasis, Twilight School provides counseling and other support as needed.

For more information about Talent Development High Schools, see "It's Never Too Late to Help Older Students: Now Is the Time for High School Reform," by James M. McPartland and Will J. Jordan, in the *State Education Standard* (National Association of State Boards of Education, Autumn 2000).

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too many middle school students were taking general, applied math and sciences rather than courses that prepare students for the sequence of preparatory math, including algebra and geometry, or science, including the lab sciences of biology and chemistry. To close the gap, SREB not only encourages middle school students to take more challenging courses but urges eighth graders to take algebra 1, the gatekeeper course for mathematics.

Expectations and goals also strongly influence a student's prospects. In today's achievement-oriented learning environment, students need to be focused and take charge of their learning early to meet the overall rigorous learning standards for all students, no matter how their personal career and college goals vary and no matter what options the students use to pursue their goals. Unfortunately, too many middle school students make the transition to high school with no long term vision for their high school career or about what they want to do afterwards. They wait until they are juniors or seniors to decide to go to college, when it is too late to take the prerequisite courses for post-secondary education.

Replacing the grade 12 endpoint with a grade 11–14 model.

When students view high school graduation as a goal in itself, they can miss valuable opportunities to set goals, examine their options for postsecondary education and the world of work, and prepare to move forward.

Indeed, the National Commission on the High School Senior Year has observed that the senior year of high school often is wasted. In part, this may be because seniors have little incentive to focus on goals and work hard to meet them. For example, in many states, most students pass required exit exams by their sophomore or junior year. Only three states schedule their exit exams in the twelfth grade, while thirty-nine states conduct tests in the eleventh grade and thirty-three in the tenth grade. Similarly, seniors planning to go to college submit their applications early in the year. With little left at stake, many students succumb to "senioritis," putting little interest and effort in their studies.[32]

On the other hand, high school students who do think ahead are amply rewarded for their foresight. Students are more likely to graduate from college if they take the full sequence of college preparatory courses or take advantage of one of the numerous options, such as AP or Dual Enrollment, for getting a head start in college.

In today's competitive postsecondary environment, increasing numbers of seniors are getting the message. The AP program has grown to about 900,000 students in thirty-five subjects. Some 27,000 students take the International Baccalaureate program and thousands more receive credit from some 2,900 colleges through the College-level Examination Program run by the College Board. Countless other high school students take courses from community colleges under a variety of arrangements (see box).

Such alternatives not only provide students with challenging and relevant experiences during their senior year, but they ensure that students going into the work and postsecondary worlds continue to receive support and structure from the high school. The Diploma Plus High School model offers its students many of these experiences (see box). Students spend their last year taking at least one college course and also doing a work internship. However, Ephraim Weisstein, who oversees this high school program, noted that although students leave the school for these experiences, "we still hold on to them by one leg."[33]

Rethinking high school to provide a seamless transition between grades 11 and 14 can reinvigorate the final years of high school, encourage students to focus on their longer-term education and career goals, and provide students with meaningful experiences in the work and postsecondary worlds. Moreover, the flexibility provided by the restructured high school also makes it easier for students to participate in other learning experiences, such as doing a capstone unit, serving an internship, working on a service learning project or taking a college course.

Policies for Review

If a goal of restructuring the high school is to prepare students for postsecondary education, the existence of two separate education systems is a real barrier. Communication, cooperation, and articulation are essential to any relationship between the two systems. States should consider the following as ways to promote those goals.

Create a single office or coordinating group to address issues between the two systems. A number of states have already established P–16 councils. Maryland has taken the opportunity to align the two systems, and in Georgia colleges and middle schools cooperate to promote the goal of college going among at-risk seventh and eighth graders. Such groups can also promote partnerships between high schools and nearby colleges.

- *Create a joint database or link the databases of the two systems.* This provides an opportunity to monitor student progress across the two systems and identify areas that need improvement in both systems.

- *Align high school general education requirements so they link with the requirements of the first year of college.* High schools can be much more confident about adequately preparing students if this is done.

Give students and parents a clear understanding of how best to use high school as preparation for a job and further education. To this end, state policymakers should consider the following:

- *Offer students counseling about the academic requirements and demands of high school and postsecondary education in middle school.* One approach would be to require students to meet with their counselor and parents to create an individual learning plan in seventh or eighth grade.

- *Start some college gatekeeper courses in middle school;* for example, offer algebra as an eighth-grade course.

Collaboration between High Schools and Community Colleges

A number of models for collaboration between the high schools and postsecondary institutions have developed over the last twenty years. Many are based in community colleges, where more than half of high school graduates enroll within a year of leaving high school.

Collaborations address a number of interests, including improving the articulation across P–16, providing high school students with college experiences, countering "senioritis" by making more challenging courses available, and recruiting for the college.

K–16 Partnerships. These state-level programs typically are organized around alignment but they also address other issues and activities. Their form and function vary from state to state. In Maryland, the partnership fosters several kinds of collaborations focused on professional development, fieldwork in the schools, and other areas. In Georgia, local councils decide on focus areas. As one of its activities, the Ohio Learning Extension Network targets and reallocates fiscal resources to support student success.

Dual Enrollment and Concurrent Enrollment Programs. In this model, high school students earn college credits through courses taught at the college or the high school. Some programs provide a sequence of related courses; in others, courses are treated like electives. A critical success factor in such programs is how well the high school and college agree on the management of the program.

Tech Prep and 2+2+2 Programs. These programs create links among high school, college, and employer as students progress through a well-articulated, technology-focused curriculum starting in the last two years of high school and going on to a two- or four-year college degree.

Middle College High Schools. High schools are located on a community college or university campus. The two faculties collaborate on the mission, curriculum, and learning frameworks. Organized for at-risk students, middle high schools have had success in improved attendance, achievement, and graduation rates.

Distance Learning. Technology provides ways to link high school and community college systems via virtual high school courses. High school students gain access to a wider selection and depth of courses as well as some experience with the postsecondary world.

Supporting Transitions for At-Risk Youth

Diploma Plus brings high school diplomas within reach of students deemed unlikely to graduate, and helps these students make successful transitions to college and careers. Developed by the Commonwealth Corporation, a quasipublic workforce development corporation in Massachusetts, Diploma Plus currently serves 700 at-risk and formerly out-of-school students between ages 16 and 22.

Diploma Plus improves these students' outcomes by structuring a route to a rigorous regular high school diploma rather than a GED. The model features a performance-based program leading to a high school diploma, mapped to state and national standards, benchmarked at the eighth-, tenth-, and twelfth-grade levels, and emphasizing portfolio development and contextual learning. The "Plus" phase of the program requires students to negotiate challenging transitional experiences while still in the high school program. These include several major projects, a structured internship, and at least one college course for credit.

3. PERSONALIZING THE LEARNING EXPERIENCE OF EACH STUDENT

More than half of U.S. high school students attend schools with enrollments of 1,500 or more, and more than three-quarters attend schools with enrollments of at least 1,000. While such large, comprehensive high schools can offer wider choices of courses and extracurricular activities, they also can increase the risk that many students will be lost in the crowd.

At many large high schools, leaders are aware of this risk and have taken steps to strengthen students' connections to the school community and to the learning experience through strategies such as mentoring programs, multiyear student-counselor assignments, and personal learning plans. Sheer numbers, however, militate against the success of these efforts. For example, research confirms that teenagers value their relationships with caring adults, but, in large comprehensive high schools, counselors and teachers who are in positions to serve as role models often are stretched too thin to give meaningful attention to any one student.

In researching its report, *Raising Our Sights: No High School Left Behind,* the National Commission on the High School Senior Year found that the average high school counselor is responsible for 500 students.[34] The average teacher has at least 120 students, with teachers in urban high schools often assigned as many150 to 200 students.[35] While students can have relationships with adults in any school, as the numbers increase so does the likelihood that too many students will get minimal attention and fall through the cracks.

Athletics and other extracurricular activities traditionally have provided opportunities for students to forge strong bonds to the school through rituals and project that foster school spirit, friendships, and shared values. Larger schools typically can offer more extracurricular activities that appeal to diverse populations, but size-related issues such as competition and transportation problems can severely restrict who participates.

Deborah Meier, founder of New York's Central Park East schools, has observed that when it comes to getting the attention of adults in most of today's schools, "only two groups of kids—each a small minority—are able to join the subgroup where the adults are significant people to them. These are 1) the academic stars...and 2) the star athletes....The faculties know these kids well; they share common values and aspirations; and the kids and teachers thrive on their mutual admiration and respect. Occasionally there are subschools for [the arts]. But the vast majority of kids—probably 70-80 percent—belong to enclaves that include no grown-ups."[36]

Not surprisingly, many students in large comprehensive high schools feel alienated from the school and the learning experience. And while students can feel alienated from a high school of any size, teachers and counselors may be less likely to notice the problem in schools where thousands of students pass them in the halls.

Policy Issues

School size

A review of the literature indicates that students feel more connected in smaller schools and perform better on a number of measures. Although researchers do not agree on a single

A Typology for Small Learning Communities

There are a number of ways to structure small learning communities. Kathleen Cotton, a researcher at the Northwest Regional Educational Laboratory, defined the different types of small learning communities based on the education research literature. Here are some of the classifications.

Small learning community. Any separately defined, individualized learning unit within a larger school setting. Students and teachers are scheduled together and frequently have a common area of hte school in which to hold most or all their classes.

Autonomous small school. May be in its own building or in a building with another school, but it is organizationally, fiscally, and instructionally independent. A **freestanding school**, i.e., a school with its own space, budget, and principal is an autonomous school.

Focus school (theme or theme-based school). An autonomous, small urban school that was created with a "focus"-a theme around which teachers and students coalesce because of their shared interest in it.

Alternative school. Although this can have several connotations, increasingly the term is associated with small schools for students who have been suspended or expelled from regular school, or have experienced academic difficulties. A large high school may contain an alternative school, which may operate during regular school hours or as an after-school or evening program.

School-within-a-school (SWAS). A SWAS operates within a larger "host" school, either as the only or one of several SWAS. SWAS typically have their own personnel and program, and students and teachers are self-selected, but staff must defer to the principal of the host school on matters of school safety and building operations.

House plan. Students and teachers are assigned to smaller groupings within the larger school. Students in each house may take some of their core courses together and share the same teachers, and each has its own discipline policies and student government. The house plan usually co-exists with the larger school's departmentalized strudture and shares the school's curriculum, instructional approaches, and sometimes its extracurricular programs as well. Houses may be organized by grade or vertically, encompassing two or more grades.

Career academy. This school-within-a-school focuses on a broad occupational area, such as engineering. Teachers and students are self-selected. The career academy curriculum directs students' attention to the application of school-based learning by including in its curriculum work-based learning experiences with businesses in the community.

Pathway, pod or cluster. These are usually a sequence of career-related and/or academic courses that lead toward graduation. They constitute a small learning community when each pod or cluster contains classrooms for teachers of core subjects with the teachers functioning as a team, instructing the same group of 80 to 120 student and planning together. Students usually take additional subjects elsewhere in the school, but at least half of each day is spent in the same pod or cluster. **Career clusters or pathways**. Career clusters are focused on broad-based industry areas, which include all careers from technical through professional levels. Career clusters identify academic and technical skills needed by students as they transition from high school to postsecondary education and/or employment.

Minischool. A minischool is somewhat more distinctive than a house, but less so than a SWAS, in that it has its own curriculum and instructional approach, but it is still under the authority of the host school and shares that school's resources.

Multiplex or multischool. In this arrangement the entire building is made up of schools-within-a-school. This includes new building that are specifically designed to house multiple small schools. A **scatterplex** is like a multiplex, except that the two or more small schools that share a principal are in different buildings.

Source: Kathleen Cotton. (2001, December). *New Small Learning Communities: Findings from Recent Literature*. Portland, OR: Northwest Regional Educational Laboratory

optimum high school size, most research concludes that high schools ideally should have 400 to 800 students.[37] Students in small schools are more satisfied with school and less likely to drop out. They earn better grades, are less likely to demonstrate behavior problems, and are more likely to participate in extracurricular activities.[38] The beneficial effects of small schools are particularly pronounced for youth from low-income families and students with limited English proficiency.

Researchers believe these findings reflect several characteristics of smaller schools:

- People come to know and care about one another more in smaller settings.
- Parents are move involved in smaller schools and administration and staff have more positive attitudes.
- Changes are easier to implement, so small schools are more likely to use reform methods such as team teaching, experiential learning, and performance assessments.[39]

For state policymakers there are a number of tradeoffs, including the economics of running smaller schools as well as the degree to which small schools can offer curriculum choices for students. Some state regulations encourage consolidation. Minnesota, for example, offers grants for districts that cooperate and form one larger school rather than a smaller school in each district. However, consolidation also can mean increased costs of transportation and time spent traveling to school. Some economists have looked at the costs another way. A 1998 cost-benefit analysis of the formation of a number of small high schools in New York City found that while the overall per-pupil cost was greater in smaller schools, the cost per graduate was considerably lower compared to the larger high schools in the city.[40]

Organizational patterns of schools

Larger comprehensive high schools can be reorganized to provide similar conditions to those that promote strong student connections in smaller schools. In fact, an overriding organizational question in high school reform is how to make space for innovative approaches to learning that have the potential to engage students who have not been motivated by the traditional approach.

Fragmentation inherent in the traditional comprehensive high school model promotes alienation at every level. Students come from different communities, where many already have strong loyalties. At the school, they are sorted into separate tracks with different expectations and opportunities. Students take six or more courses a day in equal blocks of forty to fifty minutes, an approach that makes it hard for them to focus on a subject or form effective learning relationships with a teacher. Teachers are organized by discipline into departments, which makes it a challenge to determine the student's aspirations, learning styles, or overall academic progress.

Here are some of the ways reorganization strategies have addressed fragmentation:

Teacher teams. Removing teachers from the department structure and putting them on interdisciplinary teams can change the way teachers and students relate, as well as how the disciplines are taught. Teams can consist of two or more teachers of different subjects within a grade (horizontal integration) or across grades (vertical integration). For example, a typical ninth-or tenth-grade teacher team would include a teacher from each of the four core disciplines. The four teach the same 100 to 125 students and they are given time not only to plan academic curriculum together but also to track the progress of individual students and address problems. Because many students have trouble negotiating the transition from middle school, this kind of team approach in the early high school years is one way to give students more attention and support.

Schools within schools. This strategy seeks to foster closer connections by breaking out sets of teachers and students into separate units within a school. Popular variations include dividing a school into a number of "houses" or creating a career academy for upper-class students. This approach has met with uneven success. Such "quasischools" usually require real autonomy with separate governance, administrators, and support teachers. Otherwise, tensions often arise between the staffs of

High School Reform Model: **Coalition of Essential Schools**

One of the longest running modern restructuring movements, the Coalition of Essential Schools was founded in 1984 when a group of twelve schools joined with Brown University education professor Ted Sizer around a set of reform principles discussed in Sizer's book, *Horace's Compromise*.

As of January 2001, there were more than a thousand schools involved in the coalition. About a quarter of these were full members; the rest were in the planning or exploratory states. The coalition has a national center in Oakland, CA, and nineteen regional centers around the country.

Despite its national presence, the organization holds that no two good schools are alike. The Coalition represents a process built around its core principles rather than a specific model or set of packaged professional development activities. These principles, excerpted from the coalition's materials, include the following:

1. Schools should focus on helping young people learn to use their minds well. A school should not be "comprehensive" if such a claim is made at the expense of its central intellectual purpose.

2. The school's goals should be simple: that each student master a limited number of essential skills and areas of knowledge. The aphorism "less is more" should dominate: curricular decisions should be guided by the aim of thorough student mastery and achievement rather than by an effort to merely cover content.

3. The school's goals should apply to all students, while the means to these goals will vary as those students themselves vary.

4. Teaching and learning should be personalized to the maximum feasible extent. Efforts should be directed toward a goal that no teacher have direct responsibility for more than eighty students in high school or middle school and no more than twenty in elementary school.

5. The governing practical image of the school should be student-as-worker, rather than the more familiar image of teacher-as-deliverer-of-instructional-services. Accordingly, a prominent pedagogy will be coaching, to provoke students to learn how to learn and thus to teach themselves.

6. Teaching and learning should be documented and assessed with tools based on student performance of real tasks. Multiple forms of evidence, ranging from ongoing observation of the learner to completion of specific projects, should be used to better understand the learner's strengths and needs, and to plan for further assistance. The diploma should be awarded upon a successful final demonstration of mastery for graduation—an "Exhibition." As the diploma is awarded when earned, the school's program proceeds with no strict age grading and with no system of credits earned by time spent in class.

7. The tone of the school should explicitly and self-consciously stress values of unanxious expectation ("I won't threaten you but I expect much of you"); of trust (until abused); and of decency (the values of fairness, generosity, and tolerance).

8. The principal and teachers should perceive themselves as generalists first (teachers and scholars in general education) and specialists second (experts in one particular discipline). Staff should expect multiple obligations (teacher-counselor-manager).

9. Ultimate administrative and budget targets should include, in addition to total student loads per teacher of eighty or fewer pupils on the high school and middle school levels and twenty or fewer on the elementary level, substantial time for collective planning by teachers, competitive salaries for staff, and an ultimate per pupil cost not to exceed that at traditional schools by more than 10 percent.

10. The school should demonstrate nondiscriminatory and inclusive policies, practices, and pedagogies.

Source: The Coalition of Essential Schools. Online at www.essentialschools.org.

the larger school and the smaller unit, especially if the school within a school is viewed as having more resources or greater success.[41]

Counseling and advisories. Finally, schools can be reorganized to provide more intense, individualized counseling and support. While adding counselors to reduce the counselor/student ratio would help, the cost of adding staff might be prohibitive. Counselors might more easily be added as part of a reconfiguration of staff. Also, schools can use teachers as advisors, incorporating advisories for all students as part of the daily or weekly schedule, and adding school and extracurricular programs intended to help specific groups of students navigate high school and the transition to college or work.

Individualized student plans. Finally, learning is personalized when students are freed from lockstep approaches that do not take into account the needs and aspirations of the student. Increasingly, reform models like High Schools That Work and reformers like the National Commission on the High School Senior Year recommend that each student begin developing his or her own individualized student plan by middle school and revisit it at least annually. Such a vehicle has a number of benefits:

- The plan is developed in consultation with parents, the counselor, teachers, and any other advisors in the school.
- The plan is developed in the context of the each student's long-range goals and interests. This means in the High Schools That Work version that the student can take a major in an area of interest or participate in a career-related learning experiences like internships or job shadowing. Schools can match the student with career mentors and other opportunities.
- The plan is flexible. Interests and long-term goals can change during adolescence. Also, the student may need more time to achieve some of the goals and the plan may be adjusted for extra assistance or new approaches.
- The plan ensures that each student takes the rigorous coursework needed to reach the destination preparing him for work and academics. Even if interests and pacing change, the student is cognizant of the learning standards that form the core of his or her high school education.

Instituting individual plans is facilitated by technology, which provides a more efficient way to track student progress against learning standards and develop class schedules and combinations.

Policies for Review

State policymakers need to reexamine how they influence the building, renovation, sharing, and leasing of facilities. These policies often push districts to invest in larger rather than smaller schools. In particular, states should review their policies on:

- **Consolidation.** Do states encourage districts to combine schools to create ones that are too large?
- **Facility plans.** States sometimes impose square footage and other space and construction requirements or must approve a plan before a bond can be issued. Do these make it more difficult to build a small school?
- **Funding for renovation.** Can schools access renovation funds to divide existing buildings into two or more smaller schools or create separate space for school(s) within a school?
- **School reform plans.** In considering high school reform, some states provide recommended designs or design principles. Do these promote a variety of high school models? Do the principles allow for small schools?
- **Leasing guidelines.** Can districts lease space for small schools, especially if the space is shared?
- **Charter guidelines.** Do state policies apply limitations or incentives that guide the purchase or lease of charter school buildings?

4. CONNECTING SCHOOLS AND STUDENTS TO THE COMMUNITY

High schools are generally walled enclaves, designed for the most part to keep students and the business of learning separate from the rest of the world. Parents and the community participate in events but for most of the time, youth are in a segregated learning environment.

In the vision of the restructured high school, learning often takes place in the context of the community. The community not only functions as a resource for the school but students take on purposeful projects that make the school a resource for the community.

Policy Issues

Promoting parent involvement

Research shows that family involvement tends to taper off when students reach high school. This is unfortunate, because support from parents or other caring adults remains important to high school students' success. Students with involved families reach higher grades, complete more course credits, have better attendance, display fewer behavioral problems, and are better prepared for school. This finding holds regardless of the students' background or achievement level.[42]

When parents continue to play a role, the nature of their involvement changes when their child reaches high school. For example, parents of high school students are more likely to attend school activities like assemblies or workshops on topics like drug and alcohol abuse prevention than to be a classroom aid or accompany a class trip. However about two-thirds of parents continue to help teenagers with homework.

Efforts made by high schools to solicit parent participation in activities is an important factor in family involvement. For example, when parents and participate in college planning workshops and talk with youth about college plans, the students earned higher grades in English and math.[43]

In the restructured high school, schools invite and support parent involvement.

Alaska Parents and Communities Support Youth Development Assets

The Alaska Association of School Boards has sponsored a statewide effort to promote youth development and success by building on the assets of youth.

The organization identified forty key building blocks for parents, community, and school to help children and youth succeed. They used input from communities around the state and identified ways to build the assets within local mores. Examples of assets are:

- family life that provides high levels of love and support,
- schools that set clear rules and consequences for student behavior, and
- kids who feel they have control over many things that happen to them.

Each asset's role is supported by research and parents receive suggestions for how to help youth build these assets through their local culture. As part of the process, youth were surveyed by the Search Institute to see what percentage felt that each asset had influence in their lives. Results of this survey provided a guide to areas of needed work.

Source: *Helping Kids Succeed—Alaskan Style.* Juneau, AK: Association of Alaska School Boards.

Promoting Contextual Learning

Contextual learning connects what is being learned to a real-world situation. It motivates students by helping them make a connection between knowledge and its application to their lives. In addition, contextual learning instructional strategies require that the students themselves play a more participatory, hands-on role.

There are many forms of contextual learning instruction and most of them can be done at least in part outside of the school (see box on page 28). Service learning and work-based learning are particularly suited to turning a high school into a center of contextual learning.

Systematic research on the effectiveness of the approach is limited, especially since teachers often use a variety of instructional approaches in designing a course. However, there is evidence of the following:

- skills are more easily developed ih context;[44]
- students who work on "real issues" are more motivated to master content;[45] and
- when studies seem relevant, students tend to be more focused and persistent in their studies.[46]

Further, a review of research on project-based learning found that students were not only motivated, they were more likely to be self-directed learners and to study for understanding.[47] Studies of contextually based service learning indicate that students are less likely to have behavior problems and more likely to come to school.[48]

In a review of the research on school-based service learning, the National Commission on Service Learning found positive effects on students' motivation, engagement, attendance, and academic learning. In addition, students involved in service learning were less likely to engage in "risky" behaviors, had a greater ability to relate to culturally diverse groups and had a more developed sense of civic and social responsibility. Service learning gave students the opportunity to make a positive contribution to the community and a more realistic view of possible careers. An added benefit was that participating community members had more positive perceptions of both the school and students.[49]

Policies for Review

State policymakers should review existing staff configurations for high schools. To succeed, contextual initiatives may need a full or part-time dedicated position. A parent outreach, service learning, or work internships coordinator may be important to effectiveness of such efforts, but it is expensive. States should look at a variety of alternative ways to redistribute school staff to include such positions.

Learning in Context

Contextual teaching and learning relates what is taught to some real-world context, thereby encouraging students to make connections with their own lives. It not only provides a way to enhance students' under-standing but also can help motivate their learning.

Learning in context lends itself to active learning strategies in which students do hands-on experiments or pursue complex projects that require working with other students over a period of time. Examples of learning in context include the following:

Curriculum integration. Teachers work together to integrate subject matter through such devices as a project or theme. Sometimes known as interdisciplinary teaching or thematic teaching, it allows students to pursue a subject or project across the curriculum, creating a less-fragmented approach to how students are taught.

Service learning. This approach reinvents community service by tying that experience to students' coursework and classroom activities. As part of providing a needed service to the community, students may have to learn new skills, research issues related to the service, or use the service environment itself as a learning laboratory. Student reflection also is part of service learning.

Project-based learning. Individuals or small groups of students pursue a complex assignment or project that often ends in some product or presentation.

Problem-based learning. Individuals or small groups of students pursue a real-world problem or question that often requires research and development of skills before culminating in a presentation of results.

Work-based learning. Students pursue career and academic instruction outside the school in the workplace. The experience can take a number of forms, such as an internship, apprenticeship, or school enterprise.

High School Reform Model: America's Choice

America's Choice grew out of the New American Schools project funded by the National Center on Education and the Economy. The principal goal of America's Choice schools is that all students will graduate able to meet internationally benchmarked standards in English language arts and mathematics—the America's Choice Performance Standards (formerly New Standards). As of May 2002, the model was implemented in 455 schools nationwide.

Schools that sign on to America's Choice agree to undertake an intensive program of curricular, instructional, and organizational restructuring and professional development. Schools designate a full-time design coach, who receives intensive training from program staff and who then is responsible for implementing the design on-site in coordination with the principal and a leadership team. Schools work on five fundamental areas:

- standards and assessments;
- learning environments;
- community and service supports;
- public engagement; and
- high performance management.

At the high-school level, schools are organized into two divisions, a lower division for ninth and tenth graders and an upper division for eleventh and twelfth graders. Each division is further organized into smaller houses of 200 to 400 students. All students are required to take all the core academic courses. Students that enter the ninth grade with deficits in English or math are provided assistance through double periods of English or fundamentals of mathematics, with tutoring available if needed.

America's Choice encourages upperclassmen to earn college credits or an occupational skills certificate in addition to a high school diploma.

All students graduating from America's Choice schools, regardless of their specific career aspirations, are expected to have the knowledge and skills needed to attend college. In addition, the schools' curriculum and instruction not only emphasize high-level content, but empower students to apply their knowledge to real-world problems.

Source: "Solutions for Failing High Schools: Converging Visions and Promising Models," by Nettie Legters, Robert Balfanz, and James McPartland. Paper prepared for the Office of Vocational and Adult Education, U.S. Department of Education, March 2002. Available online at www.ed.gov/offices/OVAE/HS/legters.doc.

States may need to review safety and transportation policies, including guidance concerning fingerprint and background checks for nonschool employees. One concern in engaging business and the community as part of the school curriculum is ensuring that students remain safe, both inside and outside the school. There also is concern over liability. Massachusetts, for example, requires dual-enrollment students to sign waivers if they attend evening classes at a college.

5. DEVELOPING QUALITY EDUCATORS AND HELPING THEM TAKE ON NEW ROLES

Our vision of the new educator in a restructured high school will change the way teachers relate to students and colleagues, both in and outside of the school building.

Teaching staff will consist of quality educators who have been adequately prepared to teach a rigorous, standards-based curriculum to all students. In the new

high school models, all teachers will be prepared with appropriate pedagogical skills, basic academic skills, workplace skills, and mastery of their specific content areas. Teachers also will have up-to-date knowledge of technology and how to use it effectively in the classroom.

Embedded professional-development and teacher-learning communities will play a central role. Different high school models challenge educators to master new roles and pedagogies. While professional development holds a high priority in the restructured high school, it is likely to be different from what most teachers have experienced to date. With the goal of raising student achievement, professional development will have a strong focus on content and teaching methods. It will be embedded within the school day and within the teaching community of the school. Most important, it will be driven by the needs of that particular school.

Teachers' roles will change to reflect new instructional approaches, such as team teaching, contextual learning, and interdisciplinary teamwork. The restructured high school must create a culture that encourages learning among teachers, not only in academic content areas but also in instructional practices. Teachers will be more likely to use contextual learning strategies in which the teacher acts as coach, students work alone and in teams, and assessments involve more than paper-and-pencil tests. Teachers will be more likely to team with other teachers and spend more time with students, sometimes taking on the role of advisor.

Teachers will serve as key knowledge-givers, but also as guides. In the restructured high school, teachers will mentor students throughout their high school years. A teacher will provide guidance to a group of students across multiple school years to monitor and address the needs of individual students, especially those with academic problems.

Policy Issues

Few would disagree that quality education for all students depends on having a competent, fully qualified teacher in every classroom. Yet today's high schools face significant challenges as they struggle to meet this goal.

A primary area of concern is teacher preparation. Research indicates that too many teachers step in front of their classrooms knowing little more than their students. Here are some of the areas in which the current system of preservice training and inservice professional development is failing both teachers and students:

Basic skills. Research shows that teachers' mastery of verbal and math skills correlates closely with their students' achievement. For example, a study of Arkansas and Texas data on factors influencing student learning found that teachers' scores on a basic skills test played a more influential role than other factors, including the teacher's classroom experience, class size, and whether a teacher held a master's degree.[50]

While thirty-seven states require prospective teachers to pass a test of basic skills before entering a classroom, expectations measured in these tests remain low.[51] Examining Praxis I, the instrument most widely used by states for gauging basic competencies in reading, writing, and mathematics, one study found that "none of these sections exceeded high-school level, and at least two-thirds of the mathematics items were judged to be middle-school level."[52] Further, although Praxis I was designed to qualify applicants for teacher preparation programs, many states allow new teachers to take the exam at any time prior to licensure—even after completing their degrees.

Despite the low level of required skills, many states have similarly low expectations for how well prospective teachers need to master them. For example, in 1998–99, prospective teachers in Minnesota needed to earn a score of just 169 on the math portion of the Praxis I—which they could achieve with correct answers on just 45 to 50 percent of the questions.[53]In contrast, Virginia, a state that has pushed for higher passing scores in an effort to raise teacher quality, requires candidates to score at least 178 on the math portion, correctly answering between 68 and 73 percent of the questions. According to the researchers, 44 percent of test-takers nationwide would not be able to pass the test in Virginia.[54]

Subject mastery. Common sense suggests that teachers must understand a subject themselves before they can teach it effectively to others. Research confirms that student performance is higher in high school math and science if teachers have a college major in their field.[55] While highly qualified teachers are important for all students at every grade level, high school's college preparation curricula can be especially demanding, requiring teachers to have sophisticated and comprehensive subject-area knowledge.

All too often, however, teachers lack sufficient college-level coursework. A recent study based on the 1999–2000 *Schools and Staffing Survey* showed that about one-quarter of the high school classes in core academic subjects are taught by teachers with no undergraduate or graduate major in that field.[56] In almost one-fifth of the core classes, teachers lack even a college minor in the field. The problem is most severe in mathematics. In more than one-third of secondary-level math classes, the teacher did not have even a minor in math. In high-poverty and high-minority schools, nearly one-half of math classes are taught by out-of-field teachers.

Only twenty-six states require teacher candidates to have a major in the subject area they will be teaching; a figure that sharply declines when looking at requirements for middle grades teachers.[57] Only five states—New Jersey, Colorado, New York, Ohio, and Rhode Island—require middle school teachers to have majors in the subject area they will be teaching.[58]

Depending on professional development to make up the deficit has, up to now, been largely a false hope. In 1999, only thirty-eight states reported that they required all teachers to participate in professional development to maintain certification. Only seven states required that *some* activities be in the teachers' subject area.[59] Less than half of the states provide professional development funding for local education agencies, and of those the per-teacher expenditure generally is minimal.[60]

Workplace skills. In addition to academics, high schools need to equip students with the cognitive, social, and other tools they will need to succeed in the workplace. The SCANS report identified a set of basic skills and competencies that

Establishing New Roles for Teachers Raises Personnel Issues

The National Education Association's 2002 *Guide to Online High School Courses* illustrates how new ways of teaching and learning can affect traditional assumptions about administration and staffing.

Developed in collaboration with NASBE and other education associations, practitioners, and representatives of relevant industries, the guide identifies personnel issues involved in establishing high school online courses, reflecting challenges that arise when classes are no longer confined to specific locations and times. The questions raised by the guide offer a helpful template for state policymakers as they consider the new roles for teachers inherent in the restructured high school.

- ☐ Are a plan and budget in place to ensure consistent support and professional development for online educators?
- ☐ Will online courses be led by local or state-certified teachers, or by teachers certified outside the state? If courses come from outside vendors, will the courses be delivered by local or in-state faculty, or by instructors provided by the vendors?
- ☐ Is there a process to ensure the preparedness of instructors to teach online?
- ☐ Who monitors and evaluates the online teacher? Do contractual or other personnel safeguards apply?
- ☐ Do employment policies provide sufficient flexibility to allow such practices as flextime and working from home?
- ☐ Do compensation and preparation time for educators adequately reflect the demands of developing and delivering online courses?
- ☐ Will on-site staff be provided to mentor students enrolled in off-site online courses and, if so, must they be teachers?
- ☐ Are intellectual property rights to online courses assigned?

predict success in the workplace. Despite widespread consensus that graduating seniors should have these skills, research suggests that students continue to leave high school without them.

An often quoted 1998 survey by Public Agenda suggests that employers and educators disagree on how well high schools prepare students for the world of work. According to the survey, 58 percent of employers believe that public high school graduates do not have the skills needed to succeed in the workplace.[61] In contrast, 63 percent of teachers said that most or all of their students have the necessary skills.[62]

Technological literacy. Misalignment between teacher preparation and workplace expectations is particularly evident in the area of technology. In a society where computers are commonplace, teachers as a group fall behind the curve in comparison with the rest of the workforce—not to mention their students.

In large part, this gap is related to capacity. Although most classrooms now have the necessary hardware and the wiring for Internet access, 78 percent of teachers mention a lack of computers as a barrier to incorporating technology into instruction.[63]As states and districts struggle with tight budgets, many public school teachers still have to make do with obsolete equipment, high student-to-computer ratios, or even no computers at all.

Teachers are willing—even eager—to acquire the skills that would enable them to make creative and productive use of computers, and research suggests that an investment in professional development can pay real dividends. A nationwide survey revealed that the more hours teachers spent in training in the use of computers and the Internet, the more they used technology for instruction.[64] Yet, many teachers feel frustrated in their attempts to acquire this knowledge. In the same survey, 82 percent of the teachers reported a lack of release time for training as the greatest barrier to using technology, and 67 percent reported that training opportunities were inadequate.[65]

In the comprehensive model, the fragmented nature of the high school structure also can place obstacles in the way of teachers' efforts to provide effective instruction. A large high school can be a lonely place for teachers as well as students, and if the school is highly departmentalized, teachers may feel further isolated from each other and from their students. For a teacher, this sense of isolation can result in a loss of mission. When this happens, students lose something more—a champion for their education and growth.

Teachers who are unable to collaborate across disciplines lose valuable educational opportunities—for example, to enrich the content of a social studies unit on the Civil War by integrating English class readings from the same period. Isolated teachers also may find it difficult to consult with other teachers to assess a student's performance across classes, identify unmet learning needs, and coordinate effective strategies—for example, to provide writing opportunities in classes other than English to a student who has difficulty writing.

Administrative demands on teachers also can make it harder for them to do their jobs. Unlike some other professionals, educators typically have little if any time in their highly prescribed schedules for activities like professional development, reflection, planning, collaboration, networking, and mentoring that enhance their ability to connect with their students and with each other. In the most recent *Schools and Staffing Survey,* more than 70 percent of teachers reported that routine duties and paperwork interfered with their jobs.[66]

Policies for Review

In the 2002 report, *Annenberg Challenge: Lessons and Reflections on Public School Reform,* the authors noted that, to be successful, improvement needs to involve the district and the state as well as the individual school.[67] While policymakers at many levels will have roles in meeting the ongoing commitment to quality educators envisioned for restructured high schools, policies at the state level will directly influence the process in several key areas. Policymakers should pay particular attention to the following:

Reviewing preparation programs for teachers. Teacher education programs must ensure

High School Reform Model: First Things First

Developed by the Institute for Reform and Research in Education, First Things First (FTF) is a clear, flexible framework for school reform that districts and schools can adapt to fit their specific needs. One of the newer school improvement models now being implemented across multiple sites, FTF began in 1996 at one high school in Kansas City, KS, and is now implemented district-wide in that city as well as at four other sites in Missouri, Mississippi, and Texas.

FTF promotes three overarching goals:

- strengthening relationships among students and adults;
- improving teaching and learning; and
- reallocating budget, staff, and time to achieve the first two goals.

To achieve these goals, FTF has developed a framework with seven critical features, four for students and three for adults.

For Students

- **Provide continuity of care** across the school day, across multiple years, and between school and home. FTF uses what it calls "Small Learning Communities" to keep the same groups of educators, students, and parents together over several years.
- **Set high, clear, and fair standards for academics and conduct.** These include expectations for what students should know and be able to do by the time they graduate—as well as at key points along the way.
- **Lower student-adult ratios** and increase instructional time in language arts and math. FTF aims to reduce student-to-staff ratios to 15:1 or less for core academic courses. This is accomplished primarily through redistribution of staff within schools.
- **Provide enriched and diverse opportunities for students to learn,** perform, and be recognized.

For Adults

- **Equip, empower, and expect all teaching staff to implement standards-based instruction** that actively engages all students in learning. This means ensuring that all teachers know what good instruction looks like, providing ample opportunities for high-quality professional development, and giving teaching teams the authority to make instructional decisions.
- **Give small learning communities and schools the flexibility to redirect resources** (including time, money, staffing, and learning space) to respond to new challenges and needs.
- **Ensure collective responsibility for student outcomes.** Teaching teams, schools, and district staff participate in a collective system of rewards and negative consequences based on student achievement.

FTF schools in Kansas City have achieved the following results:

- **Graduation rates** over a three-year period increased from between 40 and 47 percent to 70 percent.
- **Student attendance** has increased by 10 to 15 percent.
- **Student achievement** (as measured by districtwide reading assessments) has increased across all grade levels, especially for secondary school students.

Source: *First Things First: An Introduction.* Institute for Reform and Research in Education, Philadelphia, PA. Available on online at www.irre.org/pdf_files/FTF_Intro.pdf.

that candidates demonstrate strong verbal and math skills as a prerequisite for entering the program. Teacher preparation must be aligned with the state's learning standards, including workplace skills, and teachers must be trained in active learning and contextual learning strategies. Colleges of education also must identify when and how new instructional strategies can be employed most effectively.

Examining credentialing regulations. To ensure that prospective teachers are being properly trained in the basic skills, in a content area, and in appropriate teaching methods, policymakers must make sure that state credentialing requirements are aligned with the expectations of the restructured high school.

Reviewing recertification requirements. Teachers must receive further education in their content areas as well as in pedagogy techniques. For both new and veteran teachers, policymakers need to align training with the state's student academic standards and with the expectations of their roles in the restructured high school.

Setting high standards for professional development. As states set rigorous standards with high expectations for all students, they also must provide for aligned teacher training that continues throughout an educator's career, *setting minimum requirements for both time and content.* Professional development should encompass and update all the requisite areas of teacher preparation: pedagogical skills, basic academic skills, workplace skills, mastery of technology, and mastery of their specific content areas.

In addition to content, state policymakers will need to consider the commitment of time and money that will be needed to reach their goals. They also should address key areas of access, including how the training will be developed and made available and how to build release time into teachers' schedules to permit them to reach professional development goals.

Reviewing how schools are staffed and organized. Policymakers should examine the roles and responsibilities of both administrators and teachers, paying particular attention to workloads, teacher-to-pupil ratios, scheduling, and other issues that would impact the ability of staff and faculty to work and plan together, participate in professional development, follow the overall academic progress of students, or otherwise perform the roles envisioned for the restructured high school.

3. Next Steps for Policymakers

Most studies look at high school reform in terms of a single school. The literature is filled with case studies of charismatic principals and/or dedicated staff who have dramatically changed the way the school operates.[68] Most schools, however, do not have the capacity to generate reform on their own. Even those that have initially been successful have difficulty sustaining reform as conditions change.

To achieve sustainable reform, all schools need strong encouragement and support from the district, state, and professional community. They need the backing for the reform that comes when their community values the change.

Similarly, restructuring the high school must be accompanied by changing the larger education system. The five goals of reform explored in this report all involve systemic changes, a circumstance that adds complexity to the change process but ultimately provides the stability the effort needs to succeed.

Finally, change needs to occur in the context of the larger community. To provide a seamless transition to postsecondary education and the workplace, schools must be aligned with what is happening in the neighborhood, the state, and national and global economies. Studies of what works in state education reform confirm that policymakers can facilitate this all-important step by supporting strong political leadership that builds partnerships with the professional and business leaders around a larger reform agenda.[69]

Following are some strategies that state policy leaders can use to set the stage for sustainable and systemic high school reform.

1. Take the lead in identifying the need for reform and developing a broad-based response.

State boards of education and other policy leaders can use their positions—both formally and informally—to bring about reform. Ex officio, they have the authority to hold hearings, commission reports, and access data that can be used to define the crisis in broad terms but with evidential support. They can initiate formal or informal coalitions based on common interests across state entities, such as the university system, the governor's office, and the legislature, and they can reach out to the private sector. Informally, leaders can use their positions as bully pulpits to generate interest, set the tone for the agencies under their purview, and actively monitor progress toward reform.

2. Develop an organizing vision for the reform

To gain support and move stakeholders to a common goal, policy leaders must communicate a clear picture of where the reform is going and what it will look like when achieved. By identifying the fundamental components of high school reform, this organizing vision also helps spotlight what needs to be changed and what doesn't. The organizing vision also sets the stage for effective coalitions by focusing separate efforts on a shared goal.

Organizing visions typically are produced by high-level commissions or blue ribbon panels that include representatives of all the stakeholders of reform. Their report and other products of the commission become tools for communicating with participants and the public and for keeping the reform on course. The experience of the Maine Commission on Secondary Education, detailed in the box below, illustrates the potential of this approach (see box on page 37).

3. Pursue public support for the vision

While political support for reform is essential, it is a fact of life that leaders leave office and parties go in and out of power—two good reasons why champions of school reform must propel their goals with a clear and enthusiastic public mandate.

Garnering support for fundamental changes in the high school structure poses some unique challenges. Attending a traditional high school is an experience shared by most Americans. Whether prom queen or academic grind, jock or outsider, almost everyone who has grown up in the United States has strong memories of the high school experience and retains highly personalized associations with its learning opportunities, norms, and structure.

As early as possible in the reform process, leadership should reach out to potential partners, stakeholders and the public, building awareness of why change is needed and how the vision represents change for the better. In addition to

Who Should Participate in High School Reform?

In addition to the staff of the school and school district, these people and organizations also will play a role in the success of the effort and should be brought to the table:

- Chief state school officer
- State board of education
- Local school boards and superintendents
- Parent-teacher groups
- Governor
- State legislature
- State education agency
- Colleges departments of education
- State education associations for teachers, principals, superintendents, counselors, local boards
- State university system
- School/college accreditation organizations
- Curriculum developers
- Professional development providers
- Community groups
- Employers
- Students
- Local/state business coalitions

How a State Commission in Maine Is Changing Secondary Education

In 1997, Commissioner of Education J. Duke Albanese appointed the Maine Commission on Secondary Education to review the state's secondary education system and identify how it should be shaped to ensure every student receives a world-class education. Members of the commission included teachers, principals, superintendents, and university professors who worked together for eighteen months to review the existing system and identify key challenges.

To guide the reform process, the commission established core principles that comprised their vision for schools:

- A safe, respectful, and caring environment
- High universal expectations with a variety of learning opportunities
- Understanding and actions based on assessment data
- Teacher practice that values and builds on the contributions and needs of each learner
- Equitable and democratic practices
- Coherence among mission, goals, actions, and outcomes

Based on these principles, the commission identified fifteen core practices for learning and teaching. For example, one core practice states that "every student employs a personal learning plan to target individual as well as common learning goals and to specify learning activities that will lead to the attainment of those goals." The practice includes an individualized assessment of a student's strengths and challenges; the collaborative (student, teacher, parent) development of a plan that meets the state and district learning standards and supports that specific student's goals for the future; and review of progress every six to eight weeks.

The commission's report, *Promising Futures: A Call to Improve Learning for Maine's Secondary Students*, included ways the commission could support actual change in the schools. Noting that "secondary schools cannot go it alone," the report identified who else, besides state and local officials, education associations, universities and colleges, parent groups, and businesses and allied organizations, should be involved in following up on each of the report's recommendations. In its appendix, the report offered suggestions for starting local dialogues on the status and future of local secondary schools.

Since its publication, the report has been the touchstone for a number of initiatives influencing high schools across the state, including a new Center of Inquiry on Secondary Education, which the commissioner established within the Department of Education. The center conducts summits, summer institutes, regional workshops, and other venues to discuss using the report's principles and core practices as a framework for change. By summer 2002, the center had worked with eighty-four of the state's 128 high schools, and thirty-three high schools were undergoing whole school reform through the CSRD program.

Several complementary initiatives have advanced reform efforts.

- A project to train content-area teachers in adolescent literacy supports efforts to ensure that all high school students can read at grade level.
- The Personal Technology Initiative supports the goal of a laptop for each seventh grade student. The goal is to personalize learning by providing each student with the tools to develop and track a personal learning plan and develop an electronic portfolio with all the work tied to state learning standards and the core principles of *Promising Futures*.
- At the instigation of the state department of education, Maine legislature passed new guidelines for graduation that become effective in 2007. The guidelines stipulate that graduation cannot be based only on Carnegie units, nor solely on a high-stakes test. Standardized tests can be used, but the guidelines recommend the test count for 10 percent or less of the graduation requirement.

Maine's comprehensive and well-planned process has the potential to transform high schools in that state. State leaders already are looking at ways to expand and deepen the effort through private and business support.

Work of the commission benefited from three key factors:

1. A real world approach that saw reform as the solution to a wider crisis. The effort to improve secondary schools is a response to a larger problem. In the past, while Maine had a low high school dropout rate, a disturbing number of graduates left the state instead of going on to college. Keeping high school students in-state and ready to go on to postsecondary education will contribute to the skilled workforce needed to attract business and improve Maine's economy.

2. High visibility and political will of the initiative's leaders. Reform initiatives have benefited from strong support by the commissioner of education and the governor. Despite budgetary and other pressures, improving secondary schools continues as a high priority for both.

3. A noncoercive process that promotes meaningful participation. The commission's report was presented as "an invitation to a discussion." Schools volunteer to join the process; to participate, their teams must represent the whole school, not just the administrators.

commonly used media and venues, leaders should create new forums for generating understanding and support, such as summits, regional meetings, town halls, and public hearings.

4. Conduct a state policy audit

Once an organizing vision has been defined, leaders need to identify and review existing policies, rules and regulations to see which support and which hinder the effort. Expect to find many of the latter. The comprehensive high school is much like a century-old tree, rooted in regulations and anchored by decades of supporting policies.

Using the general policy issues identified in this report as a guide, champions of reform would be wise to identify and deal preemptively with specific issues that might otherwise stall or misdirect the process.

5. Develop an action plan and implementation strategy

Research is inconclusive about whether it is more effective to implement reform efforts all at once or conduct the process in stages. Policymakers must employ their own knowledge of their state's systems and politics, using public engagement and other venues to obtain—and heed—feedback from stakeholders.

6. Use the state university system to conduct research and evaluations of new high school models and strategies.

Research on many aspects of the restructured high school models is limited. To augment available literature and gain valuable state-specific information, consider calling on your state's university system to construct and carry out a research agenda that will inform your policy and practice.

Support the effort by locating funds for the project and facilitating access to the schools and relevant data. Arrange for schools to provide the necessary data so the state can track progress.

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Appendix A: A Framework for Rethinking High School

In crafting their own visions for reform, policymakers need to consider fundamental assumptions about how what high schools should do, how they should do it, and who should help guide the restructuring process. Here is a framework to guide their thinking.

1. What is high school in the twenty-first century?

Questions:

- What is the basic unit of "high school"?
- How does it fit in the P–16 continuum?

Issues to be considered:

- Separating the academics of high school from the social culture
- Uncoupling the time frame of high school from chronological age or grade structure
- Removing the school walls
- Aligning high school within the rest of the education system

Policies:

- Definitions of high school
- Accreditation measures
- Guidance regarding the hours of instruction and the school day

Who sits at the table?

- All K–12 stakeholders

2. Who attends high school?

Questions:

- How do you define high school eligibility?
- How does the high school enroll and keep all eligible students?

Issues to be considered:

- Growing diversity of student population
- Equity of access and high expectations
- Personalization of learning and varying rates of progress

Policies:

- Guidelines regarding school admission and choice
- Counseling and career services
- The amount of time that is allowed before a student must leave the system
- Creation of three-, four-, and five-year programs of study
- Teacher/pupil ratios

Who sits at the table?

- Parents
- State policymakers
- District and school administrators
- Teachers
- Guidance counselors

3. What do students learn?

Questions:

- What should students learn?
- How should students learn?
- How will we know the curriculum is aligned with the standards?

- How should students and schools be assessed and held accountable?

Issues to be considered:

- High standards for skills and content that allow diversity of approaches
- Authentic learning
- Instructional strategies and settings that enhance workplace skills
- Multiple assessments of learning
- Tracking individual progress as way of supporting all students

Policies:

- Standards
- Curriculum frameworks
- Accountability and assessment systems
- Professional development
- Textbook/materials adoption

Who sits at the table:

- State policymakers
- State education agency staff
- District and school officials
- Teachers
- Researchers
- Parents
- Curriculum developers

4. How are high schools organized?

Questions:

- How big should a high school be?
- How can schools be organized to support all eligible students?
- How can schools be organized to reflect the learning needs of students?

Issues to be considered:

- Reducing school size (smaller schools, small learning communities within schools)
- Increase student identity and commitment to both the school and learning
- Rescheduling the school day to mirror learning needs, including time outside the school (internships, service learning, projects)
- Changing the times school is held to accommodate other demands on students (e.g., jobs)
- Extending the time available for learning (after school, Saturdays, year round)
- Organization into departments by discipline as a barrier to changing curriculum and instruction
- Creating time for teachers' professional development and student preparation

Policies:

- Construction building and funding
- Seat time
- Teacher/pupil ratios
- Funding
- Budgeting
- Transportation

Who sits at the table?

- State policymakers
- State education agency staff
- District and school officials
- Teachers

5. Who are the teachers and administrators?

Questions:

- How should schools be staffed?
- How can teacher preparation be aligned with the requirements of the restructured high school?
- How does the high school as a workplace encourage professional development and learning?
- How do you ensure teacher and administrator quality?

Issues to be considered:

- Adequacy of preparation in content area and in instructional approaches

- Reconfiguration of teacher assignments to better reflect instructional approaches (team teaching, interdisciplinary teams, etc.)
- Value of embedded professional development and teacher learning communities
- Changing role of teacher from knowledge-giver to guide and coach
- Reconfiguring the roles of administrators

Policies:

- Teacher education preparation and professional development
- School staffing and organization
- State credentialing and certification/ recertification requirements

Who sits at the table?

- Teacher education schools
- Credentialing organizations
- State policymakers and certification agencies
- District and school officials
- Teachers and teachers unions
- Administrators and their representative bargaining units

6. How do you know students are ready to graduate?

Questions:

- How will we know when students have achieved the common standards?
- When can students move out of high school to postsecondary education or the workforce?

Issues to consider:

- Multiple measures that student has met standards
- Influence of Carnegie units versus measures of performance on timing of graduation
- Timing and quality of tests (end-of-course exams, exit exam, etc.)
- Connecting high school with the student's next stop

Policies:

- Graduation requirements
- Dual enrollment policies
- Apprenticeships/workforce programs

Who sits at the table:

- State policymakers
- District and school officials
- Parents
- Employers
- Postsecondary education organizations

Appendix B: Resources for Rethinking High School

Recent Major Policy Papers on State Policy and Restructuring the High School

American Youth Policy Forum, *High Schools of the Millennium: Report of the Workshop* (Washington, DC: American Youth Policy Forum, 2000).

M. Cohen, *Transforming the American High School: New Directions for State and Local Policy* (Boston, MA: Jobs for the Future, 2001).

M. W. Kirst, "Overcoming the High School Senior Slump: New Education Policies." *Perspectives in Public Policy: Connecting Higher Education and the Public Schools* (Washington, DC: The Institute for Educational Leadership and the National Center for Public Policy and Higher Education, 2001).

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M. Martinez and J. Bray, *All Over the Map: State Policies to Improve the High School* (Washington, DC: National Alliance on the American High School, 2002).

National Commission on the High School Senior Year, *Raising Our Sights: No High School Senior Left Behind* (Princeton, NJ: The Woodrow Wilson Fellowship Foundation, 2001).

The U.S. Department of Education has a website on high school: www.ed.gov/offices/OVAE/HS/index.html The website provides links to 18 papers commissioned in 2002 for The High School Symposium, held on April 4, 2002, in Washington, DC. While the papers address the future federal role in high schools, they also provide research and ideas on the future of the high school in general.

More Information on High School Reform Models

National Clearinghouse for Comprehensive School Reform. Includes an on-line catalog of reform models in addition to resources, library and an inquiry service
1001 Connecticut Ave, NW, Suite 310
Washington, DC 20036
Phone: 202-872-3727/1-877-766-4CSR
www.goodschools.gwu.edu

Northwest Regional Educational Laboratory Models Catalog: http://www.nwrel.org/scpd/catalog/

New American Schools
1560 Wilson Blvd, Suite 601
Arlington, VA 22209
Phone: 703-908-9500
www.naschools.org

Other Sites and Materials of Interest

The following provide information on some of the research and strategies cited in this report:

As a follow-up to the influential report, *Breaking Ranks: Changing an American Institution* (1996), the National Association of Secondary School Principals published a compendium of the research behind the 80 recommendations in the *Breaking Ranks* report: National Association of Secondary School Principals, *What the Research Shows: Braking Ranks in Action* (Reston, VA: National Association of Secondary School Principals, 2002).

Center for Problem-Based Learning
Illinois Mathematics and Science Academy
Phone: 630-907-5956
www.imsa.edu/team/cpbl/cpbl.html

National Service Learning Clearinghouse
National Service-Learning Partnership
Academy for Educational Development
100 Fifth Avenue
New York, NY 10011
Phone: 212-367-4570
www.servicelearning.org/

National Service Learning Commission, *Learning In Deed: The Power of Service Learning for American Schools* (2001).
www.servicelearningcommission.org/report.html

Career Academy Support Network
University of California, Berkeley
Graduate School of Education
Berkeley, CA 94720-1674
Tel.: 510-643-5748
casn.berkeley.edu/

A number of private non-profit organizations work on school reform and youth development issues:

Cross City Campaign for Urban School Reform
407 S. Dearborn, #15000
Chicago, IL 60605
Phone: 312-322-4880
www.crosscity.org

The Forum for Youth Investment
7014 Westmoreland Avenue
Takoma Park, MD 20912
Phone: 301-270-6250
www.forumforyouthinvestment.org

The National Association of State Boards of Education is a nonprofit, private association that represents state and territorial boards of education. Our principal objectives are to strengthen state leadership in education policymaking; promote excellence in the education of all students; advocate equality of access to educational opportunity; and assure responsible lay governance of public education.

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NASBE
NATIONAL ASSOCIATION OF STATE BOARDS OF EDUCATION

277 South Washington Street
Suite 100
Alexandria, VA 22314
703.684.4000
www.nasbe.org

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